Chapter 7: Edit Errors

Computerized edits are automated processes that test the validity of data fields. SEER and registry-defined computerized edits are integrated into SEER*DMS. A severity level is assigned to each edit as described in the *Error Severity Levels* section of this chapter. In SEER*DMS, the severity level is used to trigger specific manual tasks and to prioritize errors during editing tasks. The SEER*DMS editing screens provide an indication of edits that failed and the fields associated with those edits. System reports are available to monitor error levels and identify patient sets with errors.

It is recommended that, whenever possible, changes be made to the patient set and not to the record.   Therefore, only errors that must be resolved prior to screening should be resolved in record data fields (see *Chapter 8: Resolving Record Errors*). All other errors should be resolved when the data are incorporated into a patient set. The edit errors may be resolved when performing a Visual Edit Patient Set or Consolidate task; or you have the option of saving the patient set and allowing the errors to be resolved in a Resolve Patient Set Errors task. These tasks are described in detail in *Chapter 12: Consolidating Data*, *Chapter 13: Visual Editing*, and *Chapter 14: Resolving Patient Set Errors*.

Patient set edits are executed when a patient set is opened, validated, or saved in the SEER*DMS editor. If you are creating a report or data extract related to patient set errors, you may need to refresh the errors to ensure that new or modified edits have been applied.   SEER*DMS provides a system task for running all edits on a defined cohort of patient sets in the database. This task is described in *Chapter 14: Resolving Patient Set Errors*.

In this chapter, you'll learn about

- Edits Implemented in SEER*DMS
- Error Severity Levels
- System Task to Execute Edits in Patient Sets
- Color Codes Used in SEER*DMS Editors

Edits Implemented in SEER*DMS

Edits implemented in SEER*DMS include: SEER Edits, SEER Extended Edits, registry-defined edits, and system edits that enforce database integrity (SEER*DMS and SEER*DMS Registry rule sets in SEER*DMS). The SEER Edits cover fields submitted to SEER and represent the edits implemented in the SEER*Edits software. The SEER Extended edits were developed by the NCI to extend edits beyond those fields sent to the SEER Program. The extended edits include fields that are not required to be transmitted to SEER. Registry-defined edits are specific to the local registry and validate fields collected by the registry where a similar SEER edit does not exist.

*There are three ways to view the logic for edits in SEER*DMS:*

- To view information related to an edit that failed, click **Edits** in the left navigation of the record or patient set editor. Click the **Info** link related to the edit. The edit information page includes the edit logic, data fields that are involved, and revision history.
- To view the information page for any edit when editing a Patient Set, select **View Edits** from the patient set menu. Select a rule set and rule ID from the drop-down lists.
- If you have the *system_administration* permission, you can search the source code by edit ID, fieldname, or other text. Click **System > Administration**. The current server log will be shown when you first enter the page. Select *System Files* in the **Name** drop-down list. Select the XML file from the *Edits* section in the **Files** drop-down list. The filenames are based on rule set. Use the Firefox search tools to find the edit of interest.

Error Severity Levels

The SEER and local edit rules are defined in configurable XML files. Each definition includes the validation logic and a severity level that can be set to low, moderate, high, or critical. If the severity level is not specified in a rule, the level is given a value of low by default. During the initial processing, the automated edit task applies the edit rules to an incoming record. If a record only has fields with low or moderate edit errors, the fields are flagged but the record moves forward in the workflow and is screened for reportability. If a record has one or more fields with high or critical edit errors, the record is sent to a manual Resolve Record Errors task for review prior to reportability screening.

In the initial system configuration, the critical error level is reserved for edits that check data values to determine if they violate database constraints. Values that violate these constraints would cause a system error if saved to the database. Since records are stored in a text format, these constraints only apply to patient set data. For this reason, you should not encounter critical errors in a Resolve Record Errors task. *Note: It is technically possible to configure the edits to use the critical error level for other purposes. However, it is recommended that you only assign the critical error level to edits that check for database constraints.* Please refer to the *SEER*DMS Technical Reference* for additional information related to configuring registry-specific edits.

High, moderate, and low provide three additional levels for specifying the priority of edit errors. Edit errors that must be resolved prior to screening must be designated as high. For all other edits, the severity level is set according to SEER and local guidelines.

You will be able to view the rule ID, error message, severity level, and validation logic for each error. See *Chapter 8: Resolving Record Errors* and *Chapter 14: Resolving Patient Set Errors* for detailed instructions for identifying and correcting the errors.

System Task to Execute Edits in Patient Sets

All edits are executed each time a patient set is opened, validated, or saved in the SEER*DMS editor. The Patient Set Edits system task enables you to re-execute the edits on patient sets in the database. You may run the edits on all patient sets or on a cohort defined by year of diagnosis. Use the Patient Set Edits task to ensure that new or modified edits are evaluated.

A polisher is a system utility that derives, calculates, or assigns data field values. For example, polishers are used to derive collaborative stage variables; assign census tract based on address; and calculate the age at diagnosis based on date of birth and date of diagnosis. When a patient set is opened, saved, or validated, a polisher will be executed if the value of a related data item changes.

Polisher classes are defined in the registry configuration files.   These "classes" are categories which are used to control their execution sequence during system processes, and to determine whether a polisher is available in the Patient Set Edits system task. In the Patient Set Edits task, you have the option of executing the polishers in the "Pre-Edits" and "Post-Edits" classes (the polishers in these classes are listed in the documentation shown when you open the Patient Set Edits system task). Typically, these should not be run when this task is executed and should only be considered during the initial transition of data to SEER*DMS. You also have the option of executing one additional polisher in the "Standard" and "Extra-Edits" polisher classes.   In SEER*DMS, the polisher class definitions can be viewed by selecting Configuration from the System Administration page (the *system_administration* permission is required). Additional information related to polishers can be found in the *SEER*DMS Technical Reference.*

To re-execute the edits for some or all patient sets in the database:

1. Click **System** > **Tasks**.

2. Click the **Patient Set Edits** link.

3. To limit the edits to data by year of diagnosis, enter the **Start Year**. Patient sets with a diagnosis date during or after this year will be considered.

4. If you would like to define an end range, enter an **End Year**. If the end date is not specified, today's date will be used by default.

5. To include data with unknown year of diagnosis, set **Include Unknown Year** to *Yes*.

6. If you wish to execute polishers in the Pre-Edit and Post-Edit classes, set **Run Edit Polishers** to *Yes*. It is recommended that this option be set to *No* unless there is a specific need related to the transitioning of data into SEER*DMS.

7. To execute a single polisher from the "Standard" or "Extra-Edits" classes, select a polisher from the **Extra Polisher** drop-down list.

8. You may enter text related to this task in the **Comment** field. The comment for the last execution of the task is stored in the database (utility_history table).

9. Click **Start**.

The edits will be re-evaluated for each patient set in the cohort. In order to avoid creating an inordinate number of worklist tasks, a Resolve Patient Set Errors task will *not* be created for each patient set with an edit error. If the logic of a new or modified edit is implemented incorrectly, it could erroneously create an edit error for a large number of patient sets. Therefore, you must use reports rather than tasks to identify the patient sets with errors and to evaluate the error levels in the patient set data. Two system reports are available for identifying the edit errors that were triggered and the patient sets that are involved:

*   *RPT-064A: Frequency of Edit Errors in the Patient Set Data*- Run this report to evaluate the error levels in the patient data. In order to verify that modifications to edits, polishers or data did not have unexpected results, set the parameters to generate frequencies of errors for all edits in all patient set data.
*   *RPT-064B: Patient Sets with Edit Errors* - Run this report to obtain a listing of Patient Sets with an error related to a particular edit.

Instructions for creating reports are provided in *Chapter 24: Creating Reports and Extracting Data*.

Color Codes Used in SEER*DMS Editors

The SEER*DMS record and patient set editors display data fields in different colors to highlight fields that contain errors, and fields that have been modified but not validated or saved. Although you can readily see the fields that require attention on data pages, it is recommended that you review the list of errors and related data fields on the Edit Errors page prior to making changes to a record or patient set. Refer to the chapter related to your specific task for further instructions.

If two or more edits are related to a field, the edit with the highest severity level will determine the color.

`1981`	**White** indicates that the field does not have an error and has not been changed since the last save.
`xxxx`	**Dark red with white text** indicates that the field triggered a **Critical Error**. The value can not be stored in the system due to database constraints. Critical Errors will only be seen in patient sets, since database constraints are not applicable to record data.
`0000`	**Medium red with black text** indicates that the field triggered an error with a **High** severity level. In patient set data, the value may not be valid for this field or an inter-field edit may have detected a conflict with other fields. In record data fields, this indicates that an error was detected that must be resolved prior to screening. The record will not move past the Resolve Record Errors task until all errors with a severity level of high are resolved.
`9999`	**Light red** indicates that the field has an error with a **Low** or **Moderate** severity level. The value may not be valid for this field or an inter-field edit may have detected a conflict with other fields. Low and moderate errors should not be resolved when editing records, these editing tasks should be performed when consolidating the patient data.
`1980`	**Orange** indicates that a field with an error was modified, but the change has not been validated against the SEER and local edits. Fields are validated when the record is saved or the Validate button is clicked. Once validated, this field will turn to yellow if the error was corrected or to a shade of red if the field still contains an error.
`1990`	**Yellow** indicates that the field that did not have an error and was changed. The patient set or record has not been saved since the change was made. Once validated, this field will turn to a shade of red if there is an error.
`1980`	**Blue with a black border** indicates that the field was changed by a Polisher.
`0000`	**Blue with no border** indicates that the field is read-only and was changed by a Polisher. *Note: Some fields are modified when another field is changed.*
`DOE, JOHN`	Read-only fields that have not been changed are shown in a lighter shade (the color is determined by the color scheme that you are using).